STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF September 7, 2007
Prepared on June 8, 2007

ITEM NUMBER:

SUBJECT: **Waste Discharge Requirements Order No. R3-2007-0027, For Foxen Canyon Closed Class III Landfill, Santa Barbara County**

KEY INFORMATION

Location:	Approximately 2 miles north of the town of Los Olivos at 4004 Foxen Canyon Road.
Type of Waste:	Non-hazardous municipal solid wastes.
Total Capacity:	1.5 million cubic yards.
Remaining Capacity:	Closed with 82,000 cubic yards remaining capacity (July 2003).
Disposal:	Area-fill method.
Liner System:	18.4 acres unlined
Groundwater Contamination:	Low-level volatile organic compounds (VOCs) in groundwater.
Existing Orders:	Waste Discharge Requirements Order No. 94-32, Waste Discharge Requirements Order No. 93-84 (Landfill Super Order), and State Water Resources Control Board Water Quality Order No. 97-03 DWQ (General Industrial Storm Water Permit)
This Action:	**Adopt revised Waste Discharge Requirements Order No. R3-2007-0027**

SUMMARY

Proposed Waste Discharge Requirements Order No. R3-2007-0027 (Hereafter "Order" or "Order No. R3-2007-0027") for the Foxen Canyon Closed Class III Landfill (Hereafter "Landfill"), updates and replaces existing Waste Discharge Requirements Order No. 94-32, adopted by the Water Board on April 8, 1994.

Significant updates to Order No. R3-2007-0027 include:

- Closure specific information, prohibitions, specifications, and provisions.
- Language and requirements consistent with California Code of Regulations Title 27, Solid Waste, effective July 18, 1997 (CCR Title 27), and 40 CFR Parts 257 and 258 ,Solid Waste Facility Disposal Criteria, Final Rule, as promulgated October 9, 1991 (40 CFR 257 and 258).
- Removes the Landfill from Waste Discharge Requirements Order No. 93-84, "Waste Discharge Requirements Amendment for all MSW Landfills in the Central Coast Region" (Landfill Super Order).
- Language and requirements consistent with other similar waste discharge requirements recently adopted by the Water Board.
- A finding documenting Executive Officer approval of an alternative final cover and monitoring requirements specific to the alternative final cover.
- A provision requiring an Evaluation Report to assess groundwater impacts and trends, evaluate corrective actions and monitoring, and propose modifications, if necessary.

This Order benefits and protects water quality by establishing requirements for the closure, post-closure maintenance, and long-term monitoring of the Landfill

DISCUSSION

Landfill Description

The Landfill is located in Santa Barbara County at 4004 Foxen Canyon Road, approximately 2 miles north of the town of Los Olivos, as shown in Order Attachment 1.

Santa Barbara County leases 37.5 acres of land from the Chamberlin Trust. The disposal footprint comprises 18.4 acres with the remaining acreage devoted to access roads and transfer station facilities. Land adjacent to the Landfill is zoned for agricultural purposes and is generally used for rangeland and grazing. Nearby land is also used for oil extraction and crop cultivation. The closest residence is approximately 1 mile to the southeast.

Landfill History and Development

The Landfill opened in 1970 to serve the residents of the Santa Ynez Valley. During its 33 years of activity, the site received waste from the cities of Solvang and Buelton, and the unincorporated towns of Los Olivos, Santa Ynez, Ballard and surrounding rural areas. The method of discharge at the Landfill was area-fill and cover.

The Landfill became inactive on July 8, 2003 with approximately 82,000 cubic yards of airspace remaining out of approximately 1.5 million yards total capacity. Upon ceasing solid waste disposal activities at the Landfill, Santa Barbara County opened up the Santa Ynez Valley Recycling and Transfer Station immediately north of the disposal area.

The recycling and transfer station will continue to operate following formal closure of the Landfill. The closed Landfill's disposal footprint will be maintained as non-irrigated, low-maintenance, undeveloped open space.

Geology

The Landfill is located at the southern end of the Coast Ranges geologic province within a structural block known as the Santa Maria Basin. The site is underlain by the Quaternary-age alluvium overlying the older Plio-Pleistocene Paso Robles Formation.

The Quaternary-age alluvium is limited to the south end of the Landfill. The alluvium consists of approximately 18 vertical feet of stiff, moist, silty clay, dark brown to black with some fine to coarse grained pebbles derived from the Paso Robles Formation. The majority of the alluvium beneath the disposal cell was removed prior to waste placement.

The Paso Robles Formation consists primarily of poorly sorted gravel, sand, and clay. Previous mapping of the Paso Robles Formation at the site performed by EMCON & Associates (1992) identified seven lithologic zones designated from youngest to oldest: A, A-1, B, C, D, E, and F. Zones A, A-1, C, and E are low permeability claystone units which act to restrict water movement between water-bearing B, D, and F Zones, respectively. Findings 19 and 21 of the proposed Order provide additional information on the various zones.

The underlying sediments tend to dip towards the southwest at approximately five degrees. Fractures and joints within the surface exposures of the Paso Robles Formation have not been observed.

Hydrogeology

The Paso Robles Formation, the primary formation under and adjacent to the Landfill, is located in the Santa Ynez Upland Groundwater Basin. The Formation is the primary source of drinking water in portions of Santa Barbara County. Groundwater at the site is encountered within the Paso Robles Formation at depths in excess of 225 feet. There are localized perched zones at depths of 150 feet below ground surface within discrete layers of the Paso Robles Formation. The perched groundwater generally flows towards the south and southeast.

Supply Wells

There is one supply well onsite and several supply wells known to exist approximately ¾ to 1 mile to the south. History and usage of the offsite wells are unknown.

Surface/Storm Water

On-site drainage flows around the northern and southern slopes of the Landfill towards the east. Runoff from these two areas passes through culverts to separate sedimentation basins. The water from the sedimentation basins then drains through a culvert to Foxen Canyon Creek, which in turn drains into Alamo Pintado Creek approximately three miles south of the site. Alamo Pintado Creek flows south into the Santa Ynez River.

The average annual precipitation is approximately 15.8 inches based on rainfall data collected at the landfill from 1995-2003. Nearby weather stations CIMIS #64 (1992-2003), SBC 218 (1951-2003), and SBS 233 (1955-2003) have recorded average annual precipitation of 19.9, 15.5, and 17.3 inches, respectively.

The Landfill is not in the 100-year flood plain. The watershed surrounding the Landfill totals approximately 44 acres.

In addition to this Order, the Discharger is covered under a Statewide General Storm Water Permit. The Discharger performs storm water monitoring in accordance with the General Permit's Monitoring and Reporting Program and required storm water pollution prevention plan. Storm water samples are collected twice per year. Samples are collected during the first hour of runoff from a storm event that occurs during scheduled operating hours and that was preceded by at least three working days without storm water discharge. Samples are analyzed for pH, total suspended solids, specific conductivity, oil and grease, and iron.

Landfill Gas Control

To control landfill gas and prevent off-site migration, Santa Barbara County monitors soil-gas probes and operates gas extraction wells located in the waste mass and along the south and southwest perimeter of the disposal area.

Gas condensate resulting from landfill gas collection is stored in tanks and hauled as necessary to an appropriate wastewater treatment facility.

Groundwater Monitoring

The groundwater monitoring well network consists of five active groundwater monitoring wells: MW3, MW4, MW8, MW9, and MW10, and two lysimeters: LY1 and LY2. The wells are all believed to be downgradient of the disposal area. Historical upgradient wells were consistently dry and abandoned. The proposed Order requires the Discharger to submit an Evaluation Report, which shall determine the adequacy of the groundwater-monitoring network.

Compliance History

Prior to issuance of the previous Order No. 94-32, quarterly monitoring indicated the possible presence of volatile organic compounds in perched groundwater and the vadose (unsaturated) zone. The discharger was required to perform an evaluation monitoring program and propose corrective action. The Discharger submitted a Proposed Evaluation Monitoring Program on March 10, 1995, and an Engineering Feasibility Study Corrective Action Plan on September 13, 1996. The reports indicated that landfill gas appears to be impacting the vadose zone and perched groundwater. Proposed corrective action included the construction of a landfill gas collection system, with the possibility of a leachate cut-off barrier and/or passive gas vent in the form of gravel filled trench. To date only gas collection has been utilized as corrective action.

Overall, the Discharger is responsive to Regional Water Board staff's information requests.

Groundwater Degradation and Remediation Effectiveness

Based on recent monitoring gas extraction appears to have significantly reduced gas migration and the impact on the perched groundwater zone. The monitoring wells have consistently been nondetect for volatile organic compounds (VOCs) except for

MW10 which has tetrachloroethylene (PCE) ranging from a high of 3.0 ppb in June 1998 to the most recent detection at 1.32 ppb in May 2005.

The lysimeters have been inconsistent at providing enough water to analyze over the last three years. VOCs were regularly detected in LY1 prior to 1998 and inconsistently since, with detections for acetone (90 ppb in March 1999), 1,4-Dichlorobenzene (10.1 ppb and 6.12 ppb on June 2002 and September 2002, respectively), MTBE (trace in March 2002), and Dimethlydisulfide (24 ppb and 13.339 ppb in July 2000 and August 2001, respectively). Since 2003 only one sample was available from LY1 and it was nondetect for VOCs. VOCs have been regularly detected in LY2 from 1998 until 2002 but the lysimeter has been dry since 2003.

The proposed Order requires the Discharger to evaluate the current monitoring network, corrective actions taken, and propose improvements if necessary. Additionally, installation of the final cover will reduce the infiltration of water into the waste and minimize both production of leachate and landfill gas, thereby reducing the threat to groundwater quality.

Final Cover

Pursuant to CCR Title 27, a final cover for the Landfill shall consist of the following components: a minimum two-foot thick foundation layer, a low hydraulic conductivity layer, consisting of one foot thick compacted clay with a hydraulic conductivity of 1x10-6 centimeters per second or less, and at least one foot of soil capable of supporting vegetation, resisting erosion, and protecting the underlying low hydraulic conductivity layer. An engineered alternative final cover is allowed if approved by the Executive Officer and the design satisfies the performance criteria in 40 CFR Parts 257 and 258, and CCR Title 27

The Discharger submitted an Alternative Final Cover Feasibility Study in February 2005, proposing an evapotranspirative final cover. An evapotranspirative cover is composed of specific soil types and thickness to favorably store and hold water, percolation through the cover is minimized by increased evaporation and plant uptake with an appropriate vegetative layer.

In May 2005, the Executive Officer approved the use of a 4-foot Evapotranspirative Final Cover for the Landfill including the use of up to 1 foot of interim cover (dependent upon Executive Officer approval and final construction quality assurance) as part of the final cover. In February 2006, the Executive Officer approved the use of interim cover as 1 foot of final cover for a ¼ acre area on the South Embankment.

PROPOSED ORDER CONTENTS

Proposed Order No. R3-2007-0027 updates regulatory language by referencing CCR Title 27, which combined and replaced Chapter 15 and California Waste Board regulations (Title 14). This proposed Order also reflects current Federal regulations; specifically, 40 CFR 257 and 258 (Subtitle D). The proposed Order updates the Monitoring and Reporting Program to reflect current site conditions and groundwater monitoring and reporting requirements. The Order is broken into the following sections:

General Information

Findings are included that document the site's owner and location, purpose of order, description and history, classification and waste type, geology and hydrogeology, surface water and groundwater, Basin Plan, CEQA, and additional general findings.

Compliance with other Regulations, Orders and Standard Provisions

This section directs the Discharger to:

- Comply with all applicable requirements contained in CCR Title 27 and 40 CFR 257 and 258.
- Comply with State Water Resources Control Board Water Quality Order No. 97-03-DWQ, which addresses storm water associated with industrial activities, commonly referred to as "General Industrial Storm Water Permit."

Prohibitions

The WDR includes discharge prohibitions applicable to a closed Class III waste disposal site.

Specifications

The WDR includes specifications that the Discharger must meet and/or implement to comply with site specific aspects of CCR Title 27 and 40 CFR 257 and 258 pertaining to solid waste disposal practices. The specifications include requirements for the final cover, including engineered alternatives; requirements for capacities of drainage facilities; and Discharger obligations for the duration of the post-closure compliance period.

Water Quality Protection Standard

These standards define constituents of concern, monitoring parameters, concentration limits, monitoring points, points of compliance, and compliance period.

Provisions

The WDR includes provisions that address the Discharger's responsibilities regarding landfill-related impacts to water quality and provide Water Board access to the Landfill and related reports, Order severability, discharge conditions, reporting, enforcement and implementation provisions.

MONITORING AND REPORTING PROGRAM (MRP) CONTENT

Part I - Monitoring and Observation Schedule

This section contains the following requirements: periodic routine site inspections, drainage system inspections, rainfall data collection, pollution control system(s), evapotranspirative cover performance monitoring, groundwater monitoring, storm water monitoring, analytical monitoring of groundwater and gas monitoring parameters and constituents of concern, and quarterly determination of groundwater flow rate and direction.

Part II - Sample Collection and Analysis

This section establishes criteria for sample collection and analysis, methods to determine concentration limits, and specifies how these records shall be maintained. This section also establishes acceptable statistical and non-statistical methods the Discharger must use to perform data analysis, and outlines acceptable re-test procedures.

Part III – Reporting

This section establishes formats and requirements that the Discharger must follow when submitting analytical data, semiannual reports, and summaries to the Water Board. It includes notification requirements, contingency responses and reporting requirements.

Part IV - Definition of Terms

This section defines a number of terms used in the MRP.

ENVIRONMENTAL SUMMARY

This project involves an update of Waste Discharge Requirements. These Waste Discharge Requirements are for an existing facility and as such are exempt from provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15301.

COMMENTS AND RESPONSES

De Werd Family, Neighboring Landowner

A neighboring landowner submitted a comment letter dated March 16, 2006, which staff is providing in paraphrased format. Staff responses immediately follow the paraphrased comments.

General Comment

Our family lives approximately three quarters of a mile to the southeast of the Landfill, the caretakers of our property also live here, and our parents live in the home next to us. We are all reliant on domestic wells for water. Based on the history of VOC contamination at Santa Ynez Valley Landfills (Ballard Canyon, Santa Ynez Airport, and Foxen Canyon), we request that Santa Barbara County test our wells quarterly and share the results with us directly.

Response
Staff has modified Finding 30 of the WDR to account for the additional nearby supply wells. MW 10 which lies 400 feet to the south of the Landfill has consistently only had trace detections for tetrachloroethylene (PCE) ranging from 3.0 ppb in 1998 to 1.32 ppb in 2005. The MCL or drinking water standard for PCE is 5 ppb. The levels shown in MW 10 indicate that levels of PCE appear to naturally attenuate prior to moving much further downgradient.

In discussing this neighboring property owner's comment letter with Santa Barbara County Public Works, County staff stated that they had monitored a supply well nearby that had consistently been nondetect for VOCs. This information is available to the public, if requested.

Based on existing groundwater data and the distance to, and location of the supply well, Water Board staff does not believe it appropriate to formally require monitoring of the supply wells discussed; however, staff intends to review the Evaluation Report required by the WDR along with the other supply well data discussed by Santa Barbara County above. If necessary, the Discharger could be required to monitor offsite wells

County of Santa Barbara Public Works Department

The Discharger submitted a comment letter dated March 22, 2007, followed by an email on March 23, 2007, which staff is providing in paraphrased format. Staff responses immediately follow the paraphrased comments.

Comment Nos. 1, 2, 3, 4, 5, 11, 15, 16, and 17
Minor edits or corrections appear appropriate.

Response
Staff has made the appropriate edits/corrections.

Comment No. 6
There is inconsistent use of Regional Board and Water Board throughout the WDR. For consistency, we recommend Regional Board as presented on the heading on Page 1.

Response
Staff has corrected the definition on Page 1 to define the California Regional Water Quality Control Board, Central Coast Region as the Water Board and has replaced Regional Board with Water Board throughout the WDR.

Comment No. 7
The MRP, Part I.E. Evapotranspirative Performance Monitoring requires five years of soil moisture monitoring and modeling of moisture conditions. County staff believe this is unnecessary and collection of this data is likely to lead to equivocal interpretations and will be costly and time consuming to S.B. County and the Water Board. The merits of the alternative cover should be based on design studies, infiltration modeling using site specific climatic data and soil properties, borrow source investigations, and construction quality assurance procedures, which have been previously submitted to, and approved by the Executive Officer in accordance with CCR Title 27, Section 21090.

Response
Staff disagrees; empirical site specific field data reapplied into the original or an improved design model shall aid the Discharger and/or the Water Board to understand the alternative final covers performance., allowing the Discharger to address deficiencies prior to additional water quality impacts.

Comment No. 8
The MRP Part I.E.4. Soil Profile Data requires annual pot holing of the cover. Annual destructive testing of the cover is counter-productive and would compromise the function of the cover by disturbing the vegetation, interrupt pedogenisis (evolution of a productive soil horizon), and disrupt compacted placement of the cover soils. We propose visual inspections of the cover.

Response
Staff agrees and has revised Part I.E.4. Soil Profile Data to require annual visual inspections over the cover.

Comment No. 9
The MRP Part I.E.5. Runoff requires flow measuring device and logger to measure and record runoff from the Landfill. County staff suggest omitting this item because measurement

will not be useful in calculating percolation into the cover due to runoff and runon entering the flow measurement device from areas other than the final cover area.

Response
Staff agrees and has deleted Part I.E.5.

Comment Nos. 10, 12, and 13
The MRP Part I.H.5 Analytical Monitoring Locations and Table 1 Monitoring Points require significant analytical surface water monitoring. Since the Landfill is closed, and no waste material shall be exposed to rainfall, the chances of impacting surface water with Table 2 and 3 parameters will be limited. County staff ask these sections be revised to apply to groundwater only. Surface waters shall continue to be monitored per the NPDES Industrial Stormwater General Permit.

Response
Staff disagrees, surface water analytical monitoring for Table 2 and 3 constituents is consistent with other closed landfills. The table has been updated to require surface water monitoring on semiannual basis rather than quarterly when flowing. Surface water monitoring should also occur when impacts from the landfill to runoff are observed (i.e. leachate seep, exposed waste).

Comment No. 14
The MRP Part I.H.1 Groundwater and Surface Water Monitoring Parameters and Table 1 Monitoring are inconsistent with respect to monitoring frequency. County staff request that groundwater monitoring be required semiannually, which is consistent with the current MRP. County staff also request that monitoring not be required during a specific month; but be conducted during the monitoring period. County staff also questions the inclusion of all of the site's groundwater monitoring wells in corrective action and recommend that MW3, MW4, and MW8 be placed in detection monitoring. These wells have historically shown non-detect or occasional trace results for a single compound since the gas collection system was installed in 1997/98.

Response
Staff agrees and has modified the relevant sections of Part I.H.1 and Table 1 of the MRP to require semiannual monitoring for detection wells, require quarterly monitoring for corrective action wells, and show MW3, MW4, and MW8 as detection wells. As requested, monitoring is only required during the appropriate period rather than a specific month.

Comment No. 18
Attachment 2 of the WDR shows MW6. This well was destroyed as part of the closure of the Landfill. MW6 had been dry since its installation.

Response
Finding No. 27 reflects that MW6 is not an active well. Staff intends to update Attachment 2 to show all active and historical wells after the Discharger submits the Evaluation Report as required by Provision No. 27.

Email Comment
Is a JTD/ROWD required on a closed landfill?

Response
Regular submittal of a JTD is not required under CCR Title 27 and staff has modified the WDR to no longer require submittal of the JTD. However, the Evaluation Report is now required on an every five years basis to ensure appropriate modifications to corrective action or monitoring requirements occur in a timely manner.

Santa Barbara County Environmental Health Services

Santa Barbara County Environmental Health Services submitted several comments by email on March 22, 2007, which staff is providing in paraphrased format. Staff responses immediately follow the paraphrased comments.

Comment No. 1
The final sentence of Finding No. 13 should read "This option was abandoned on December 5, 2004, in response to the vocal opposition presented at local hearings by representatives from community groups."

Response
Staff agrees and has modified Finding No. 13 as recommended but without the word "vocal".

Comment Nos. 2, and 3
Regarding Provision No. 11 of the WDR, what would termination mean as the landfill is closed

and no longer accepting waste? In addition, the nature of waste material is not expected to change, because no new waste is intended to be discharged at the new site.

Response
Provision No. 11 is standard language for WDRs regulating land disposal units including closed sites. Staff believes termination though unlikely could result from the end of the Post-Closure Maintenance Period pursuant to Title 27 §20380(d)(1), §20410, and §20950, and 40 CFR 258.61 (a), this period is a minimum of thirty years or until waste discharged at the Landfill no longer poses a threat to water quality. Also, if the closed Landfill were to experience a discharge (prohibited) the Water Board could choose to modify the WDR to address the discharge.

Comment No. 4
Regarding Provision No. 22.d. of the WDR, discharge prohibitions will not likely be violated, because no waste is intended to be discharged at the inactive site.

Response
Prohibtion No. 1 of the WDR prohibits the discharge of waste at the Landfill, except as provided in an Executive Officer-approved Closure and Post-Closure Maintenance Plan for the Landfill. If the Discharger violates Prohibition No. 1, the County must notify the Executive Officer within 24 hours by telephone and 14 days in writing per Provision No. 22.

Comment 5
Provision No. 28 of the WDR (draft) requires submittal of a ROWD in the form of a JTD. However, this may be more than what is necessary for a closed site.

Response
Staff agrees and has modified the WDR to no longer require submittal of the JTD. However, the Evaluation Report is now required on an every five years basis to ensure modifications or improvements to corrective action or monitoring requirements occur in a timely manner.

Comment No. 1
The final sentence of Finding No. 13 should read "This option was abandoned on December 5, 2004, in response to the vocal opposition presented at local hearings by representatives from community groups."

Response
Staff agrees and has modified Finding No. 13 as recommended but without the word "vocal".

Water Board Staff

Edit No. 1
Water Board staff have modified Finding No. 1 of the WDR to clarify the relationship between the County of Santa Barbara and the Chamberlin Trust. Finding No. 1 defines the County of Santa Barbara as "Discharger and the Chamberlin Trust as "Owner" and specifically states that the Waste Discharge Requirements apply to both the Discharger and Owner, which is consistent to existing Waste Discharge Requirements 94-32.

Edit No. 2
Water Board staff have modified Provision No. 12, which previously just referred to a filing with the County Recorder upon closure of the Landfill. The Provision now is more specific requiring the Owner to file a deed notification, which must in perpetuity notify any potential purchaser of the property that:

a. The land has been used as a landfill.
b. The land use is restricted by the approved post-closure maintenance plan, pursuant to Title 27, Section 21170. The deed notation must include all information required by Section 21170.
c. Pursuant to Title 27, Section 21090, should the Discharger default in post-closure care, liability shifts to the new owner/operator.

Edit No. 3
Water Board staff have added Provision No. 26, which requires the Discharger to maintain financial assurance instruments

RECOMMENDATION

Adopt revised Waste Discharge Requirements Order No. R3-2007-0027 as proposed.

ATTACHMENT

1. Proposed Waste Discharge Requirements Order No. R3-2007-0027 (Includes Order Attachments 1-5 and MRP No. R3-2007-0027)
2. Comment Letters (Neighboring Landowner, County of Santa Barbara Department of Public Works)